Not Exactly Plato's *Republic*
A review of SHOP CLASS AS SOULCRAFT: AN INQUIRY INTO THE VALUE OF WORK,
by Matthew B. Crawford
Rich Haglund[1] - June 2010

> *If a pretty poster and a cute saying are all it takes to motivate you, you probably have a very easy job. The kind robots will be doing soon.*[2]

Mechanics apparently do their best thinking while working with their hands.

In SHOP CLASS AS SOULCRAFT, Matthew Crawford, a fellow at the Institute for Advanced Studies in Culture at the University of Virginia, writes about the degradation of work that occurs when thinking and doing are separated.[3] Crawford writes not only from his perspective as a doctor of political philosophy, but from his past and current experience as a mechanic.

Crawford asks, "Do we view humans as inferior computers?"[4] Customers having a car repaired at a car dealership have probably often felt treated that way. But now mechanics are being made to feel the same way, because of the trend toward "using software exclusively to diagnose [mechanical] problems."[5] "As an intended substitute for personal knowledge," Crawford declares, "the division of labor predicated on an 'intellectual technology' presents a false pretense of rationality, one that the mechanic sometimes has to work *around* in order to do his job."[6]

"[T]he twentieth century saw concerted *efforts* to separate thinking from doing." Crawford wants to help us "understand the process by which so many jobs get fragmented [so] we [can] recognize those areas of work that have resisted the process, and identify jobs in which the human capacities may be more fully engaged."[7]

Crawford's musings about work offer practical insights and important challenges for elementary and secondary education leaders. The work of economists Claudia Goldin and Lawrence Katz recently illustrated how technological advances can, as Crawford puts it, degrade both blue and white collar jobs by separating thinking from doing.[8] And teachers are quick to criticize any policy change or evaluation instrument (for students or teachers) that appears to be driven by the goal of producing students who graduate to become such "dumb" widget makers.

Effective Teachers

Professor Clayton Christensen recently said that children do not "hire" schools to teach them Algebra or help them master Spanish grammar. Instead, the job children are hoping to complete is a combination of two things: they want to feel successful every day, and they want

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[1] Rich Haglund is General Counsel to the Tennessee State Board of Education. The views in this review do not, however, necessarily represent the views of the State Board. Additional reviews are available online at http://info.tnanytime.org/sbe/?p=267.
[2] Poster from Despair, Inc., available at http://despair.com/motivation.html (last viewed June 10, 2010).
[3] Matthew B. Crawford, SHOP CLASS AS SOULCRAFT: AN INQUIRY INTO THE VALUE OF WORK 37 (2009).
[4] *Id.* at 178.
[5] *Id.*
[6] *Id.* at 179.
[7] *Id.* at 37.
[8] Claudia Goldin and Lawrence F. Katz, THE RACE BETWEEN EDUCATION AND TECHNOLOGY 173-179 (2008).

to spend time with their friends.[9] Crawford explains how engaging work—soulcraft—is just such a combination. "When the maker's (or fixer's) activity is immediately situated within a community of use, it can be enlivened by this kind of direct perception. Then the social character of his work isn't separate from its internal or "engineering" standards; the work is improved *through* relationships with others."[10]

Teachers help students feel successful every day by making schoolwork rigorous and relevant. Effective teachers, in Crawford's estimation, focus on rigorous work because they know that the practice is almost always more attractive than the finished product,[11] and they understand that "creativity is a by-product of mastery of the sort that is cultivated through long practice."[12]

Making material relevant is simply helping students be passionate about the material. "To take pleasure in an activity is to engage in that activity while being absorbed in it, where this absorption consists in single-minded and lively attention to whatever it is that seems to make the activity good or worth pursuing."[13] Effective teachers foster connections between curricular material and situations the students encounter in their lives. "

> To regard universal knowledge as the whole of knowledge is to take no account of embodiment and purposiveness, those features of actual thinkers who are always in particular *situations*. . . . We do not usually encounter things in a disinterested way, for the simple reason that things that have no bearing on us do not engage our attention, of which we have a finite amount.[14]

Crawford supports this notion with research about expert chess players. These players were able to accurately reproduce positions of pieces shown briefly on a screen, but only when the configurations they were shown were configurations that would actually occur in a game, rather than random configurations generated by a computer. "The expert is expert not because he has a better memory in general, but because the patterns of chess are the patterns of his experience."[15]

Rigorous, Relevant Curriculum

Though Crawford does not cite the work of economists Claudia Goldin and Lawrence Katz, he relies on the pattern of transitions in manufacturing they analyze.[16] Crawford explains

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[9] Presentation by Clayton Christensen, Professor of Business Administration, Harvard Business School, 2009 ECS National Forum on Education Policy, "How Disruptive Innovation Will Change the Way the World Learns," video available at http://www.ecs.org/html/meetingsEvents/NF2009/video-christensen.asp (last viewed June 11, 2010).
[10] SHOP CLASS at 187.
[11] *Id.* at 71. "Advertisers have constant recourse to a stock image: somebody engaged in some focal practice, lost in his work. Often it is precisely that focal practice that the product promises to disburden us of, such as the building of a custom car or motorcycle. Such images present a picture of cultivated skill, the sort that makes possible some wholehearted activity. The marketers seem to grasp that it is not the product but the practice that is really attractive."
[12] *Id.* at 51.
[13] *Id.* at 194. The author Philip Pullman put it this way: "The way to learning begins in delight. And true education begins at the moment delight falls in love with responsibility." *A conversation with author Philip Pullman*, Charlie Rose Show, Jan. 11, 2008, available at http://www.charlierose.com/view/interview/8881 (last viewed July 29, 2009).
[14] SHOP CLASS at 163.
[15] *Id.* at 177.
[16] Claudia Goldin and Lawrence F. Katz, THE RACE BETWEEN EDUCATION AND TECHNOLOGY 103 (2008).

that craft knowledge used to be understood completely by individuals, but is now often divided in ways that degrade the work and the worker.

> Scattered craft knowledge is concentrated in the hands of the employer, then doled out again to workers in the form of minute instructions needed to perform some *part* of what is now a work *process*. This process replaces what was previously an integral activity, rooted in craft tradition and experience, animated by the worker's own mental image of, and intention toward, the finished product. . . . Once the cognitive aspects of the job are located in a separate management class, or better yet in a process that, once designed, required no ongoing judgment or deliberation, skilled workers can be replaced with unskilled workers at a lower rate of pay.[17]

Combining this process with the notion—still prevalent in the design of elementary and secondary education curricula—that time equals learning, [18] has and will continue to lead to perverse results, even in white collar jobs:

> White-collar professions, too, are subject to routinization and degradation, proceeding by the same logic that hit manual fabrication a hundred years ago: the cognitive elements of the job are appropriated from professionals, instantiated in a system or process, and then handed back to a new class of workers—clerks—who replace the professionals.[19]

A relevant curriculum should, according to Crawford, improve a student's vision through opportunities to act.[20] Students need "occasions to exercise judgment; dumbing down work leads to reduced conscientiousness of workers."[21] Curricula should be developed with the intention of developing "disciplined attentiveness" rather than "systemized carelessness."[22] Starting a school lesson should be similar to starting to rebuild an old motorcycle. "So at the beginning of any resuscitation of an old bike, you try to think logically about a sequence of investigations and fixes that will reveal the most serious problems sooner rather than later."[23] "Rebuilding a motor, then, is more humanly involved than assembling one on an assembly line. It is a craft activity. But what does this mean, exactly? We have seen that a mechanic's perception is not that of a spectator. It is an active process, bound up with his knowledge of patterns and root causes."[24]

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[17] SHOP CLASS at 39. Crawford suggests that Joseph Stalin would have welcomed this process that occurred in American industry in the 1900s.
[18] National Education Commission on Time and Learning, *Prisoners of Time*, 5 (1994) (available at http://www.ed.gov/pubs/PrisonersOfTime/Prisoners.html; last viewed June 10, 2010). "Above all," the Commission wrote, "fixing the flaw means that time should be adjusted to meet the individual needs of learners, rather than the administrative convenience of adults." *Id.* at 31.
[19] SHOP CLASS at 44.
[20] *Id.* at 100.
[21] *Id.* at 101.
[22] *Id.* at 102.
[23] *Id.* at 118.
[24] *Id.* at 95.

And, not only should the curriculum require critical thinking, it should elicit students' passion. "Further, his knowledge and perception are bound up with a third thing, which is a kind of ethical involvement. He looks for clues and causes only if he *cares* about the motor, in a personal way."[25] Unless students are passionate about the topic at hand, they are unlikely to learn. "The truth does not reveal itself," Crawford notes, "to idle spectators. . . . Finding this truth requires … attentiveness, enlivened by a sense of responsibility to the motorcycle. He has to internalize the well working of the motorcycle as an object of passionate concern."[26] Effective teachers might help students, for example, ascertain the math and physics problems in the soft goal that England's goalie allowed the United States in this month's World Cup match, or help them conceive of how a ball designed for the World Cup could be too perfect.[27]

Crawford illustrates why students need curricula that offer depth, application and analysis, instead of simple observation and recall. "In the real world, problems do not present themselves unambiguously. Piston slap may indeed sound like loose tappets, so to be a good mechanic you have to be constantly attentive to the possibility that you may be mistaken."[28] Educators would call this metacognition or thinking about thinking. "While searching for the solution," Crawford writes, a good mechanic should also be wondering "if [his] understanding of the problem is adequate."[29]

Crawford's discussion of the importance of depth applies to curricular development. As the mechanic's vision is affected by the framework of his past experience, the student's learning capacity is affected by her past experience.[30]

> Countless times . . . a more experienced mechanic has pointed out to me something that was right in front of my face, but which I lacked the knowledge to see. It is an uncanny experience; the raw sensual data reaching my eye before and after are the same, but without the pertinent framework of meaning, the features in question are invisible. Once they have been pointed out, it seems impossible that I should not have seen them before. . . . It seems to require that you short-circuit your normal mode of perception, which is less data-driven than concept-driven. We have an *idea* of the thing that, in a sense, pre-constitutes the thing for us, prior to sensual experience.[31]

Effective Leaders

Crawford's work challenges school leaders and education policy makers to determine whether their policy decisions create an environment more likely to prepare students for a world

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[25] *Id.*
[26] *Id.* at 98.
[27] Helen Chandler, "Controversy over new World Cup ball," CNN, June 3, 2010, available at http://www.cnn.com/2010/SPORT/football/06/02/football.jabulani.ball.world.cup/index.html (last viewed June 14, 2010).
[28] SHOP CLASS at 99. Crawford goes on to note that this attitude, the mechanic being aware that he could be wrong, "is an ethical virtue."
[29] *Id.*
[30] Psychologist Dan Willingham has written and spoken about this idea, for example, pointing out that teaching content is teaching reading. See, e.g., his video, available at http://www.youtube.com/watch?v=RiP-ijdxqEc (last viewed June 10, 2010).
[31] SHOP CLASS at 91.

that doesn't exist outside of textbooks and examinations, or for a world where problems are solved—and perhaps only discovered—through metacognition. In other words, can a student learn to see what will, in a post-secondary work setting, be "right in front of [her] face" if her only educational experience or training has been on paper, where all the supposedly possible inputs have been provided by the textbook or exam author (the teacher)?

A math teacher recently described this problem and offered a pedagogical solution.[32] Dan Meyer emphasized that "drill for skill" types of practice are necessary in math education. He also noted that curricula are usually not designed in a way to get students thinking about mathematical reasoning in the world around them. Even materials that provide problems in a real-world setting show the students the mathematical elements before the students have an opportunity to define what the inputs might be.[33] Meyer explained that he has learned, after several years of teaching, to be *less* helpful, to put the mathematical framework onto problems "only as the students give me [the teacher] permission to do so."

The challenge for effective leaders is to make sure that polices facilitate engaging experiences for students that can provide the kind of satisfaction Crawford talks about in SHOP CLASS AS SOULCRAFT, both in daily work and regular testing to measure student progress.

Just as mechanics have always worked to solve a particular problem, teachers have always been "teaching to the test." The mechanic works for the satisfaction of a customer, or the mechanic's own satisfaction at having broken down the engine and solved the riddle. Teachers expect their students to leave their classrooms at the end of the day, week, grading period or year having gained additional knowledge, acquired new skills or improved upon existing skills.

Crawford, however, argues that standardized testing usually reduces teacher discretion.[34] If by "standardized tests," Crawford means tests that merely measure students' capacity to memorize terms or "spot all the possible issues" (as some of my law school exams did), then taking those tests and receiving a score on them will be less than satisfying. But, what if the "standardized" test consists of repairing engines arriving in various states of disrepair, with different tools available? Wouldn't a mechanic enjoy that challenge? What is the corollary test for educators to give students? And, until more classes offer such hands-on, lab tests, what kinds of tests will measure students' competency in a satisfying combination of thinking and doing?

Getting the score back on my bar exam was satisfying because it meant that I could get a license to practice law. The exam consisted of one day of multiple choice questions requiring serious analysis and one day of writing essays with legal advice for realistic fact patterns. Though it was not an easy two days of testing, taking the test—applying my knowledge to these new sets of facts—was actually satisfying work.

The setting within which teachers currently work and the tools they have available are less than ideal, and the mechanic may feel hampered by the software he's supposed to use exclusively to diagnose problems. But, neither one of those circumstances means the requirements to test students or diagnose motorcycle malfunctions are inherently bad. Certainly, as Crawford notes, if grades are used simply for social sorting, they're likely to be unhelpful and even destructive. Teachers and school leaders often work in settings where parents create

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[32] Dan Meyer, "Math Curriculum Makeover," TEDxNYED, April 12, 2010, available at http://tedxnyed.com/ (last viewed June 14, 2010).

[33] *Id. See also* Dan Meyer, "How to Save Math Education," Oct. 1, 2009, available at http://www.oreillynet.com/pub/e/1450 (last viewed June 14, 2010).

[34] SHOP CLASS at 45.

pressure to use grades specifically for social sorting,[35] for example—admission to Ivy League schools. But, that doesn't mean that exams and grades cannot be useful for teachers and satisfying for students.

Conclusion

"Do we view humans as inferior computers?"[36] Is the goal of elementary and secondary education to prepare low skill assembly line workers?

Our answers to these questions are measures of our morality. Fixing things, Crawford notes, leads to a moral education away from narcissism.[37] "Acquiring practical wisdom, then, entails overcoming the self-absorption of the idiot, but also the tunnel vision of the curious man whose attention is indeed directed outside of himself, but who sees only his own goal."[38] Thankfully, individuality and common goals are not mutually exclusive in soulcraft: "It is in doing the job nicely that the tradesman puts his own stamp on it. His individuality is not only compatible with, it is realized *through* his efforts to reach a goal that is common."[39]

Some might expect a motorcycle repairman with a Ph.D. from the University of Chicago to be a revolutionary. That expectation may seem satisfied when Crawford asks us to imagine "what a more integral sort of life might look like," where there is not "a disconnect between [a person's] work life and his leisure life; in the one he accumulates money and in the other he accumulates psychic nourishment."[40] But Crawford only wants us to do for adults in the workplace what Clayton Christensen suggests we should do for children in school: help them develop their capacity for individual, rational judgment and creativity[41] (to feel successful), and to feel part of "a community of those who desire to know"[42] (to spend time with their friends).

> The alternative to revolution . . . insists on the permanent, local viability of what is best in human beings. In practice, this means seeking out the cracks where individual agency and the love of knowledge can be realized today, in one's own life.[43]

[35] *Id.* at 146.
[36] SHOP CLASS at 178.
[37] *Id.* at 82.
[38] *Id.* at 124.
[39] *Id.* at 207.
[40] *Id.* at 181.
[41] *Id.* at 185.
[42] *Id.* at 199.
[43] *Id.* at 210.